AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A method for fabricating a micro-sensor device comprising the steps of

(i) fabricating on a parent substrate ~~(10)~~ at least one sensor element ~~(21)~~,

(ii) forming an interconnect layer ~~(32)~~ having first and second surfaces remotely to the parent substrate ~~(10)~~ so as to enclose the at least one sensor element ~~(21)~~ between the first surface and the parent substrate,

(iii) providing a plurality of electrical interconnections ~~(33)~~ between the at least one sensor element ~~(21)~~ and a plurality of terminations at the second surface of the interconnect layer, said terminations adapted to interface with a readout substrate ~~(38)~~,

(iv) providing a readout substrate ~~(38)~~ having a plurality of input connections ~~(40)~~ disposed on a first surface thereof, said input connections ~~(40)~~ arranged so as to substantially correspond with the terminations at the second surface of the interconnect layer ~~(32)~~,

(v) interfacing the plurality of terminations with the corresponding input connections ~~(40)~~ to form an integrated assembly~~.~~, and

(vi) removing the parent substrate ~~(10)~~ from the integrated assembly within an area corresponding substantially with the at least one sensor element ~~(21)~~.

2. (Currently amended) A method according to claim 1 wherein the step of interfacing the terminations with the corresponding input connections ~~(40)~~ comprises the step of forming metal connection bonds ~~(34)~~ there-between.

Claim 3. (Cancelled)

4. (Currently amended) A method according to ~~any of the preceding~~ claim~~s~~ 1 wherein the readout substrate ~~(38)~~ comprises an integrated circuit.

5. (Currently amended) A method according to ~~any of the preceding~~ claim~~s~~ 1 wherein the step of fabricating the at least one sensor element comprises the step of forming the at least one sensor element ~~(21)~~ on the parent substrate ~~(10)~~ so as to impart a crystallographic relationship there-between.

6. (Currently amended) A method according to claim 5 wherein the step of fabricating the at least one sensor element comprises an epitaxial process such that the crystallographic structure of the parent substrate ~~(10)~~ is imparted to the at least one sensor element ~~(21)~~ during said process.

7. (Currently amended) A method according to claim 6 wherein the parent substrate ~~(10)~~ exhibits a substantially single-crystal structure.

8. (Currently amended) A method according to ~~any of the preceding~~ claim~~s~~ 1 wherein the step of fabricating the at least one sensor element comprises a heat treatment step.

Claims 9-10. (Cancelled)

11. (Currently amended) A method according to ~~any of the preceding~~ claim~~s~~ 1 wherein the step of fabricating the at least one sensor element comprises the step of

depositing onto the parent substrate ~~(10)~~ one of a resistive thin-film layer and a ferroelectric thin-film layer.

Claims 12-15. (Cancelled)

16. (Currently amended) A method according to ~~any of~~ claims 11 ~~to 15~~ comprising the intermediate step of depositing a buffer layer onto the parent substrate ~~(10)~~ prior to the deposition of the thin-film layer.

Claim 17. (Cancelled)

18. (Currently amended) A method according to ~~any of the preceding~~ claims 1 wherein the step of removing the parent substrate comprises etching the parent substrate ~~(10)~~ using Tetramethyl Ammonium Hydroxide (TMAH).

19. (Original) A method according to claim 18 wherein the Tetramethyl Ammonium Hydroxide etchant is doped with at least one of Silicon and Diammonium Peroxydisulphate.

20. (Currently amended) A micro-sensor device comprising, at least one sensor element ~~(21)~~; an interconnect layer ~~(32)~~ having a first surface facing towards the at least one sensor element ~~(21)~~ and a second surface facing away from the at least one sensor element ~~(21)~~, said interconnect layer ~~(32)~~ having a plurality of electrical interconnections ~~(33)~~ between the at least one sensor element ~~(21)~~ and a plurality of terminations at the second surface of the interconnect layer ~~(32)~~; and a processingor ~~means (38)~~ disposed adjacent the second surface of the interconnect layer ~~(32)~~, said processingor ~~means (38)~~ having a plurality of input connections ~~(40)~~ corresponding substantially with the plurality of terminations and interfaced therewith.

21. (Currently amended) A micro-sensor device according to claim 20 comprising an array having a plurality of thermal detector sensor elements ~~(21)~~.

22. (Currently amended) A micro-sensor device according to claim 21 wherein the thermal detector sensor elements ~~(21)~~ comprise at least one micro-bridge sensor element.

23. (Currently amended) A micro-sensor device according to ~~any of~~ claims 20 ~~- 22~~ wherein the sensor elements ~~(21)~~ comprise one of a ferroelectric material and a resistive material having a temperature-dependant resistivity.

Claims 24-27. (Cancelled)

28. (Currently amended) A micro-sensor device according to ~~any of~~ claims 20 ~~- 27~~ wherein the at least one sensor element ~~(21)~~ exhibits a substantially single-crystal structure.

29. (Currently amended) A micro-sensor device according to ~~any of~~ claims 20 ~~- 28~~ wherein the interconnect layer ~~(32)~~ is electrically non-conductive.

Claims 30-32. (Cancelled)

33. (Currently amended) A micro-sensor device according to ~~any of~~ claims 20 ~~- 32~~ wherein the interconnect layer ~~(32)~~ has a thickness of less than 100µm.

34. (Currently amended) A micro-sensor device according to claim 33 wherein the interconnect layer ~~(32)~~ has a thickness of less than 10µm.

35. (Currently amended) A micro-sensor device according to claim 34 wherein the interconnect layer ~~(32)~~ has a thickness of less than 5µm.

36. (Currently amended) A radiation detector having a micro-sensor device according to ~~any of~~ claims 20 ~~- 35~~.